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2 **CLAIMS**

3 1. A method for use in a wireless communication system, the method  
4 comprising:

5 configuring a first device having a smart antenna to selectively allow a  
6 second device to operatively associate with a beam downlink transmittable to said  
7 second device using said smart antenna;

8 configuring said first device to determine information from at least one  
9 uplink transmission receivable from said second device through said smart  
10 antenna;

11 configuring said first device to determine if said associated second device  
12 should operatively associate with a different beam downlink transmittable using  
13 said smart antenna based on said determined information; and

14 if said associated second device should operatively associate with a  
15 different beam, then configuring said first device to allow said second device to  
16 operatively associate with said different beam.

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18 2. The method as recited in Claim 1, wherein said first device includes  
19 an access point device and said second device includes a client device.  
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1           3.     The method as recited in Claim 1, wherein configuring said first  
2 device to determine information from at least one uplink transmission receivable  
3 from said second device through said smart antenna further includes:

4                 configuring said first device to be capable of receiving uplink transmittable  
5 messages through said smart antenna;

6                 configuring said first device to be capable of passively gathering signal  
7 parameter information from a plurality of said uplink transmittable messages.

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9           4.     The method as recited in Claim 1, wherein configuring said first  
10 device to determine information from at least one uplink transmission receivable  
11 from said second device through said smart antenna further includes:

12                 configuring said first device to be capable of receiving at least one uplink  
13 transmittable message through said smart antenna;

14                 configuring said first device to actively probe said second device by  
15 outputting a signal suitable for causing said smart antenna to transmit at least one  
16 downlink transmittable message over at least said different beam; and

17                 configuring said first device to gather signal parameter information from  
18 said least one uplink transmittable message.

1           5.     The method as recited in Claim 4, wherein configuring said first  
2 device to determine information from at least one uplink transmission receivable  
3 from said second device through said smart antenna further includes:

4                 configuring said first device to be capable of receiving a plurality of uplink  
5 transmittable messages through said smart antenna;

6                 configuring said first device to actively probe said second device by  
7 outputting a signal suitable for causing said smart antenna to transmit at least one  
8 downlink transmittable message separately over each of a group of beams  
9 comprising said beam and said different beam; and

10                configuring said first device to gather signal parameter information from  
11 each of said plurality of uplink transmittable messages.  
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13           6.     The method as recited in Claim 1, wherein configuring said first  
14 device to determine information from at least one uplink transmission receivable  
15 from said second device through said smart antenna further includes:

16                 configuring said first device to be capable of determining information about  
17 a current position of said second device relative to said smart antenna.  
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19           7.     The method as recited in Claim 1, wherein configuring said first  
20 device to determine if said associated second device should operatively associate  
21 with said different beam downlink transmittable using said smart antenna based on  
22 said determined information further includes:

23                 configuring said first device to be capable of comparing said determined  
24 information to corresponding beam association threshold information.  
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1           8.     The method as recited in Claim 1, wherein configuring said first  
2 device to allow said second device to operatively associate with said different  
3 beam further includes at least one of the following:

4                 configuring said first device to identify that said second device is allowed  
5 to operatively associate with said different beam; and

6                 configuring said first device to identify that said second device is not  
7 allowed to operatively associate with said beam.

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9           9.     A method for use in a wireless communication system, the method  
10 comprising:

11                 determining if a client device that is currently operatively associated with a  
12 beam that is being downlink transmitted to said client device from an access point  
13 device using a smart antenna should instead be operatively associated with a  
14 different beam downlink transmitted from said smart antenna based on  
15 information determined from at least one uplink transmission received from said  
16 client device through said smart antenna; and

17                 if determined that said associated client device should be operatively  
18 associated with a different beam, then causing said access point device to force  
19 said client device to operatively associate with said different beam.

1           10.    The method as recited in Claim 9, wherein determining if said client  
2 device that is currently operatively associated with said beam should instead be  
3 operatively associated with said different beam further includes:

4           with said access point device, receiving uplink transmittable messages from  
5 said client device through said smart antenna and passively gathering signal  
6 parameter information from a plurality of said uplink transmittable messages.  
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8           11.    The method as recited in Claim 9, wherein determining if said client  
9 device that is currently operatively associated with said beam should instead be  
10 operatively associated with said different beam further includes:

11           causing said access point device to transmit at least one probe message to  
12 said client device over at least said different beam;

13           receiving at least one uplink transmitted probe response message in  
14 response to said probe message through said smart antenna; and

15           gathering signal parameter information from said probe response message.  
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17           12.    The method as recited in Claim 11, wherein determining if said  
18 client device that is currently operatively associated with said beam should instead  
19 be operatively associated with said different beam further includes:

20           comparing said signal parameter information to corresponding beam  
21 association threshold information.  
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1           13. The method as recited in Claim 11, wherein determining if said  
2 client device that is currently operatively associated with said beam should instead  
3 be operatively associated with said different beam further includes:

4           causing said first device to transmit at least one downlink transmitted probe  
5 message separately over each of a group of beams comprising said beam and said  
6 different beam;

7           receiving a plurality of corresponding uplink transmitted probe response  
8 messages through said smart antenna; and

9           gathering signal parameter information from each of said plurality of probe  
10 response messages.

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12           14. The method as recited in Claim 13, wherein determining if said  
13 client device that is currently operatively associated with said beam should instead  
14 be operatively associated with said different beam further includes:

15           comparing said signal parameter information to corresponding beam  
16 association threshold information.

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18           15. The method as recited in Claim 9, wherein determining if said client  
19 device that is currently operatively associated with said beam should instead be  
20 operatively associated with said different beam further includes:

21           determining information about a current position of said client device  
22 relative to said smart antenna.

1           16.    The method as recited in Claim 9, wherein causing said access point  
2 device to force said client device to operatively associate with said different beam  
3 further includes at least one of the following:

4               identifying that said client device is allowed to operatively associate with  
5 said different beam; and

6               identifying that said client device is not allowed to operatively associate  
7 with said beam.

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9           17.    The method as recited in Claim 9, wherein causing said access point  
10 device to force said client device to operatively associate with said different beam  
11 further includes:

12               causing said access point device to send a disassociate message to said  
13 client device.

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16           18.    The method as recited in Claim 9, wherein causing said access point  
17 device to force said client device to operatively associate with said different beam  
18 further includes:

19               causing said access point device to temporarily stop transmitting to said  
20 client device using said beam.

1           19. A computer-readable medium having computer executable  
2 instructions for causing logic to perform acts comprising:

3           configuring a first device having a smart antenna to selectively allow a  
4 second device to operatively associate with a beam downlink transmittable to said  
5 second device using said smart antenna;

6           configuring said first device to determine information from at least one  
7 uplink transmission receivable from said second device through said smart  
8 antenna;

9           configuring said first device to determine if said associated second device  
10 should operatively associate with a different beam downlink transmittable using  
11 said smart antenna based on said determined information; and

12          if said associated second device should operatively associate with a  
13 different beam, then configuring said first device to allow said second device to  
14 operatively associate with said different beam.

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16          20. The computer-readable medium as recited in Claim 19, wherein said  
17 first device includes an access point device and said second device includes a  
18 client device.



1           21.    The computer-readable medium as recited in Claim 19, wherein  
2 configuring said first device to determine information from at least one uplink  
3 transmission receivable from said second device through said smart antenna  
4 further includes:

5                configuring said first device to be capable of receiving uplink transmittable  
6 messages through said smart antenna;

7                configuring said first device to be capable of passively gathering signal  
8 parameter information from a plurality of said uplink transmittable messages.

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10           22.   The computer-readable medium as recited in Claim 19, wherein  
11 configuring said first device to determine information from at least one uplink  
12 transmission receivable from said second device through said smart antenna  
13 further includes:

14                configuring said first device to be capable of receiving at least one uplink  
15 transmittable message through said smart antenna;

16                configuring said first device to actively probe said second device by  
17 outputting a signal suitable for causing said smart antenna to transmit at least one  
18 downlink transmittable message over at least said different beam; and

19                configuring said first device to gather signal parameter information from  
20 said least one uplink transmittable message.

1           23. The computer-readable medium as recited in Claim 22, wherein  
2 configuring said first device to determine information from at least one uplink  
3 transmission receivable from said second device through said smart antenna  
4 further includes:

5           configuring said first device to be capable of receiving a plurality of uplink  
6 transmittable messages through said smart antenna;

7           configuring said first device to actively probe said second device by  
8 outputting a signal suitable for causing said smart antenna to transmit at least one  
9 downlink transmittable message separately over each of a group of beams  
10 comprising said beam and said different beam; and

11           configuring said first device to gather signal parameter information from  
12 each of said plurality of uplink transmittable messages.

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14           24. The computer-readable medium as recited in Claim 19, wherein  
15 configuring said first device to determine information from at least one uplink  
16 transmission receivable from said second device through said smart antenna  
17 further includes:

18           configuring said first device to be capable of determining information about  
19 a current position of said second device relative to said smart antenna.  
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1           25. The computer-readable medium as recited in Claim 19, wherein  
2 configuring said first device to determine if said associated second device should  
3 operatively associate with said different beam downlink transmittable using said  
4 smart antenna based on said determined information further includes:

5           configuring said first device to be capable of comparing said determined  
6 information to corresponding beam association threshold information.  
7

8           26. The computer-readable medium as recited in Claim 19, wherein  
9 configuring said first device to allow said second device to operatively associate  
10 with said different beam further includes at least one of the following:

11           configuring said first device to identify that said second device is allowed  
12 to operatively associate with said different beam; and

13           configuring said first device to identify that said second device is not  
14 allowed to operatively associate with said beam.  
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16           27. An apparatus for use in a wireless communication system, the  
17 apparatus comprising:

18           means for transmitting a plurality of smart antenna beams;

19           means for determining if a client device that is currently operatively  
20 associated with a first smart antenna beam should instead be operatively  
21 associated with a second smart antenna beam based on information determined  
22 from at least one transmission received from said client device; and

23           means for forcing said client device to operatively associate with said  
24 second smart antenna beam when it is determined that said client device should be  
25 operatively associated with second smart antenna beam.

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2       28.    The apparatus as recited in Claim 27, further comprising:  
3       means for passively gathering signal parameter information from a plurality  
4 of uplink transmitted messages from said client device.

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6       29.    The apparatus as recited in Claim 27, further comprising:  
7       means for transmitting at least one probe message to said client device over  
8 at least said second smart antenna beam;  
9       means for receiving at least one uplink transmitted probe response message  
10 in response to said probe message; and  
11       means for gathering signal parameter information from said probe response  
12 message.

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14       30.    The apparatus as recited in Claim 29, further comprising:  
15       means for comparing said signal parameter information to corresponding  
16 beam association threshold information.

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18       31.    The apparatus as recited in Claim 29, further comprising:  
19       means for transmitting at least one downlink transmitted probe message  
20 separately over each of a group of smart antenna beams comprising said first and  
21 second smart antenna beams;  
22       means for receiving a plurality of corresponding uplink transmitted probe  
23 response messages; and  
24       means for gathering signal parameter information from each of said  
25 plurality of probe response messages.

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2 32. The apparatus as recited in Claim 31, further comprising:  
3 means for comparing said signal parameter information to corresponding  
4 smart antenna beam association threshold information.  
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6 33. The apparatus as recited in Claim 27, further comprising:  
7 means for determining information about a current position of said client  
8 device.  
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10 34. The apparatus as recited in Claim 27, further comprising at least one  
11 of the following:

12 means for identifying that said client device is allowed to operatively  
13 associate with said second smart antenna beam; and

14 means for identifying that said client device is not allowed to operatively  
15 associate with said first smart antenna beam.  
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17 35. The apparatus as recited in Claim 27, further comprising:  
18 means for sending a disassociate from first smart antenna beam message to  
19 said client device.  
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22 36. The apparatus as recited in Claim 27, further comprising:  
23 means for causing said access point device to temporarily stop transmitting  
24 to said client device using said first smart antenna beam.  
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1           37. An apparatus for use in a wireless communication system, the  
2 apparatus comprising:

3           at least one smart antenna;

4           at least one transceiver operatively coupled to said smart antenna and  
5 configured to send and receive electromagnetic signals using said smart antenna;

6           logic operatively coupled to said transceiver and configured to selectively  
7 allow a second device to operatively associate with a beam downlink transmittable  
8 to said second device using said smart antenna, determine information from at  
9 least one uplink transmission receivable from said second device through said  
10 smart antenna, determine if said associated second device should operatively  
11 associate with a different beam downlink transmittable using said smart antenna  
12 based on said determined information, and if said associated second device should  
13 operatively associate with a different beam then allow said second device to  
14 operatively associate with said different beam.

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16           38. The apparatus as recited in Claim 37, wherein said logic is further  
17 configured to passively gathering signal parameter information from a plurality of  
18 said uplink transmittable messages received by said transceiver using said smart  
19 antenna.

1           39.     The apparatus as recited in Claim 37, wherein said logic is further  
2 configured to:

3           actively probe said second device by causing said transceiver to output a  
4 signal to said smart antenna that causes said smart antenna to transmit at least one  
5 downlink transmittable message over at least said different beam; and

6           gather signal parameter information from said least one uplink  
7 transmittable message received by said transceiver using said smart antenna.

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9           40.     The apparatus as recited in Claim 39, wherein said logic is further  
10 configured to:

11           actively probe said second device by causing said transceiver to output a  
12 signal suitable to said smart antenna that causes said smart antenna to transmit at  
13 least one downlink transmittable message separately over each of a group of  
14 beams comprising said beam and said different beam; and

15           gather signal parameter information from each of said plurality of uplink  
16 transmittable messages received by said transceiver using said smart antenna.

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18           41.     The apparatus as recited in Claim 37, wherein said logic is further  
19 configured to:

20           determine information about a current position of said second device  
21 relative to said smart antenna.

1           42.    The apparatus as recited in Claim 37, wherein said logic is further  
2 configured to:

3            compare said determined information to corresponding beam association  
4 threshold information.

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6           43.    The apparatus as recited in Claim 37, wherein said logic is further  
7 configured:

8            selectively identify that said second device is allowed to operatively  
9 associate with said different beam.

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11          44.    The apparatus as recited in Claim 37, wherein said logic is further  
12 configured:

13          selectively identify that said second device is not allowed to operatively  
14 associate with said beam.

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1           45.    A wireless communication system comprising:  
2           at least one client device; and  
3           at least one access point device operatively coupled to said client device  
4 over a wireless link and therein capable of transmitting a plurality of smart  
5 antenna beams, determining if said client device that is currently operatively  
6 associated with a first smart antenna beam should instead be operatively  
7 associated with a second smart antenna beam based on information determined  
8 from at least one transmission received from said client device, and causing said  
9 client device to operatively associate with said second smart antenna beam when it  
10 is determined that said client device should be operatively associated with second  
11 smart antenna beam.

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13           46.    The system as recited in Claim 45, wherein said access point device  
14 is further configured to gather signal parameter information from a plurality of  
15 uplink transmitted messages from said client device.

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17           47.    The system as recited in Claim 45, wherein said access point device  
18 is further configured to:

19           transmit at least one probe message to said client device over at least said  
20 second smart antenna beam;

21           receive at least one uplink transmitted probe response message in response  
22 to said probe message; and

23           gather signal parameter information from said probe response message.  
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1           48.    The system as recited in Claim 47, wherein said access point device  
2 is further configured to compare said signal parameter information to  
3 corresponding beam association threshold information.

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5           49.    The system as recited in Claim 47, wherein said access point device  
6 is further configured to:

7                transmit at least one downlink transmitted probe message separately over  
8 each of a group of smart antenna beams comprising said first and second smart  
9 antenna beams;

10               receive a plurality of corresponding uplink transmitted probe response  
11 messages; and

12               gather signal parameter information from each of said plurality of probe  
13 response messages.

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15           50.    The system as recited in Claim 49, wherein said access point device  
16 is further configured to compare said signal parameter information to  
17 corresponding smart antenna beam association threshold information.

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19           51.    The system as recited in Claim 45, wherein said access point device  
20 is further configured to determine information about a current position of said  
21 client device.

1           52.    The system as recited in Claim 45, wherein said access point device  
2 is further configured to perform at least one of the following:

3                identify that said client device is allowed to operatively associate with said  
4 second smart antenna beam; and

5                identify that said client device is not allowed to operatively associate with  
6 said first smart antenna beam.

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8           53.    The system as recited in Claim 45, wherein said access point device  
9 is further configured to send a disassociate from first smart antenna beam message  
10 to said client device.

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13           54.    The system as recited in Claim 45, wherein said access point device  
14 is further configured to temporarily stop transmitting to said client device using  
15 said first smart antenna beam.